

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (canceled).

2 (canceled).

3 (canceled).

4 (canceled).

5 (canceled).

6 (canceled).

7 (canceled).

8 (canceled).

9 (canceled).

10 (canceled).

11 (canceled).

12 (canceled).

13 (canceled).

14 (canceled).

15 (canceled).

16 (canceled).

17 (new). An apparatus for temperature regulation/limitation of a heat generating installation, the apparatus comprising:

- a first measurement sensor;
- a regulator operatively connected to the first measurement sensor;
- an automatic heating system including a safety module; and
- a communication interface operatively connecting the automatic heating system to the regulator;

wherein the safety module stores a maximum permissible safe temperature value, the first measurement sensor detects a temperature and transmits a corresponding temperature signal to the regulator, the regulator receives the temperature signal and transmits a corresponding temperature indication to the automatic heating system via the communication interface, the safety module compares the temperature indication to the maximum permissible safe temperature value, the safety module generates a switch-off signal when the temperature indication at least one of equals and exceeds the maximum permissible safe temperature value, and the switch-off signal causes the automatic heating system to switch off the heat generating installation.

18 (new). The apparatus as claimed in claim 17, further comprising:

- a second measurement sensor operatively connected to the regulator.

19 (new). The apparatus as claimed in claim 17, further comprising:

a sensor value/test value switching module including a switch which connects a reference resistance in parallel with a measurement sensor resistance;

wherein the automatic heating system controls switching between the measurement sensor resistance and the reference resistance.

20 (new). The apparatus as claimed in claim 19, wherein the automatic heating system includes a test requirement unit configured to transmit a test requirement signal to the sensor value/test value switching module, and the sensor value/test value switching module is configured to transmit a test value derived from the reference resistance to the automatic heating system via the communication interface in response to the test requirement signal.

21 (new). The apparatus as claimed in claim 20, wherein the regulator processes at least one of a measurement value derived from the measurement sensor resistance and the test value before the regulator transmits the at least one of the measurement value and the test value to the automatic heating system via the communication interface.

22 (new). The apparatus as claimed in claim 21, wherein the regulator includes a multiplexer operatively connected to the switch, an analog/digital converter operatively connected to the multiplexer, a shift register operatively connected to the analog/digital converter, and a linearization module operatively connected to the shift register;

thereby providing for further processing of the at least one of the measurement value and the test value.

23 (new). The apparatus as claimed in claim 17, wherein the communication interface includes at least one of a data bus or a radio link.

24 (new). A method for checking the operation in particular of the temperature regulation/limitation function for a heat generating installation, which has at least one measurement sensor, a regulator, a communication interface and an automatic heating system with the measurement values which are derived from at least one measurement sensor being passed on to the regulator for further processing and being transmitted via the communication interface to the automatic heating system, comprising:

comparing the received measurement values with a maximum permissible safe temperature via the automatic heating system; and

generating a switch-off signal on reaching or exceeding the maximum permissible safe temperature.

25 (new). The method as claimed in claim 24, further comprising:

generating a test requirement signal for at least one of functional checking of a measurement value recording, further processing of the measurement values, and transmission of the measurement values from the automatic heating system;

receiving a response to the test requirement via the automatic heating system within a defined time period; and

evaluating the response via the automatic heating system.

26 (new). The method as claimed in claim 25 further comprising:

providing the response to the test requirement with a specific attribute.

27 (new). The method as claimed in claim 25, further comprising:

generating the response to the test requirement signal by comparing test values with reference values.

28 (new). The method as claimed in claim 27, further comprising:

- locking a burner after a time delay via the automatic heating system if a comparison between a reference value and the test values does not correspond to an expected value;

- locking a burner after a time delay via the automatic heating system if a fault message is generated;

- locking a burner after a time delay via the automatic heating system if a lack of the response to the test requirement signal indicates a failure of at least one of the measurement sensor resistance/reference resistance and the regulator; and

- locking a burner after a time delay via the automatic heating system if the lack of the response to the test requirement indicates a communication fault.

29 (new). The method as claimed in claim 24, further comprising:

- comparing the received measurement values with a maximum permissible temperature difference;

- initiating a safety switch-off via the automatic heating system once the received measurement values first exceed the maximum permissible temperature difference; and

- locking a burner via the automatic heating system if the received measurement values again exceed the maximum permissible temperature difference within a specific time after the received measurement values first exceed the maximum permissible temperature difference.

30 (new). The method as claimed in claim 24, further comprising:

- incrementing a counter when the maximum permissible safe temperature is exceeded as a result of a subsequent heating effect after a burner has been switched off; and

- locking the burner via the automatic heating system when the counter reaches a predetermined maximum permissible limit value.

31 (new). The method as claimed in claim 24, further comprising:

- limiting unlocking operations via the communication interface to a maximum number of unlocking operations within a defined time period.

32 (new). The method as claimed in claim 24, further comprising:

transmitting the sensor and test values as a data message periodically and automatically from the regulator to the automatic heating system; and
checking the transmitting of the sensor and test values via the automatic heating system.

33 (new). The method as claimed in claim 24, further comprising:

transmitting the sensor and test values asynchronously to the automatic heating system as a response to a requirement from the automatic heating system; and
checking the transmitting of the sensor and test values via the automatic heating system.